

Cuscuta japonica Choisy, an Asiatic Species New to America

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The recent discovery of *Cuscuta japonica* in this country is an interesting instance of the distribution of a species of dodder far beyond its natural range. Only a few of the nearly 200 species of *Cuscuta* now known attack host plants of sufficient economic importance to make these parasites significant. But the wide range of distribution of such species makes the means of dissemination important.

Although it is conceivable for greenhouse and nursery plants to carry dodder infection, this mode of distribution is not probable because the parasite is sufficiently conspicuous to guarantee its elimination. Unusual extension of range is often, perhaps always, caused by the admixture of the dodder seeds with those of its host which are distributed for planting.

The North American *C. campestris* Yuncker thrives on leguminous hosts, especially species of *Trifolium*. Its seeds are often found mixed with those of its host and, consequently, it is found wherever such legumes are cultivated. The South American *C. suaveolens* Ser., which prefers alfalfa as a host, has been distributed in a like manner. Three European species have been widely disseminated in the same way. *C. Epilinum* Weihe which rarely occurs on hosts other than *Linum*, is to be found wherever flax is grown. *C. Epithymum* Murr. and *C. approximata* Bab. var. *urceolata* (Ktze.) Yuncker occur frequently on leguminous hosts and are widespread, especially on alfalfa and clovers.

Until recently, these latter four species—*C. suaveolens* from South America, and *C. Epilinum*, *C. Epithymum* and *C. approximata* var. *urceolata* from the Old World—have been the only foreign species of economic significance known to have been introduced into the United States.

In June 1941, R. F. Martin sent me a specimen of dodder, grown on kudzu (*Pueraria Thunbergiana* Benth.) in a greenhouse in San Antonio, Texas, which proved to be *C. japonica*. So far as known, this is the first species of Asiatic origin to be found in either of the American continents. Its discovery was reported in Lundell's *Flora of Texas* (3: 150, 1943). Finding this species in an American greenhouse was noteworthy but it was thought to be probably just a temporary introduction. The fact it was using an Asiatic host-plant would indicate that the dodder seeds were introduced with those of its host, as is usually the case with the species mentioned before.

In October, 1943, however, Erdman West of the University of Florida sent me a specimen which had been collected by J. D. Warner on a farm near Quincy, Gadsden County, Florida. This specimen, also growing on kudzu,

was also identified as *C. japonica*. When Mr. Warner was asked about the extent of the infestation, whether it had been noticed previously, etc., he stated: "It attracted attention for the first time this season (1943). However, I have no doubt but that it was there in previous years. The farmer piled brush on the fence where the dodder was found and burned brush, fence, kudzu and dodder. I doubt very seriously, however, if he will be successful in destroying all the seed."

A second letter received from Mr. Warner, May 16, 1944, states: "Recent observations reveal an outbreak of dodder in several new locations. Apparently kudzu is not the only host plant. Pokeweed seems to be a very acceptable host. I failed to find any dodder on kudzu or other native plants during the winter months and, therefore, presume the present outbreak came from seed."

C. japonica is a member of the subgenus *Monogyna*, which is characterized by having only one style in contrast to the two which are present in all species not belonging in this subgenus. The only American representative of this group is *C. exaltata* Engelm., a species found occasionally in Texas where it parasitizes ligneous hosts.

From Mr. Warner's observations it is apparent that *C. japonica* is able to utilize native American host plants and it would seem likely there are some which would prove acceptable to it. There is little doubt but that it would spread if allowed to become established in a favorable environment. Because of the possibility that this Asiatic species may be able to permanently establish itself as an undesirable alien in the American flora, it should be destroyed wherever found.

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